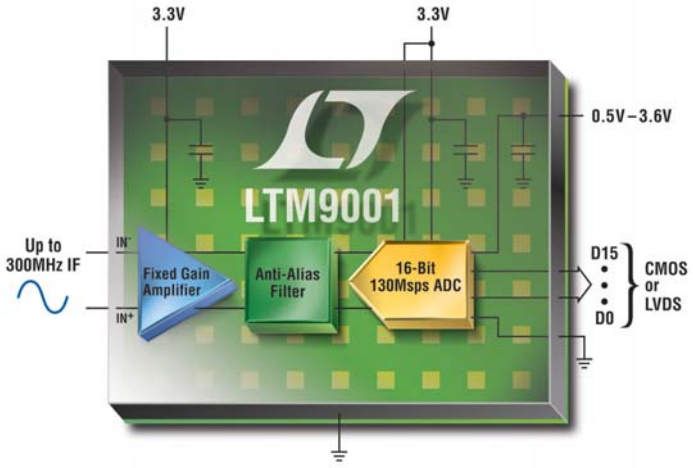
# LTM9001: 16-Bit IF/Baseband µModule Receiver

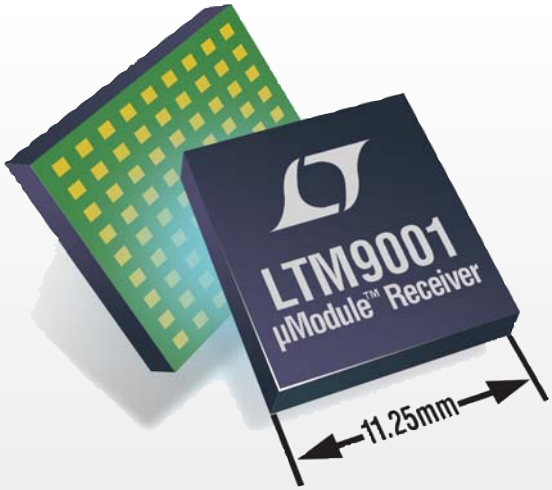



## µModule® Subsystem Dramatically Reduces Design Complexity and Board Space

The LTM®9001 is a 16-bit, IF/baseband receiver subsystem that leverages years of applications engineering expertise to maximize high speed ADC performance. The LTM9001 alleviates the need for driver and ADC impedance matching, filtering, bypass placement and layout, eliminating long hours of troubleshooting and reducing time to market. With no external components required, the LTM9001 provides a high performance solution in less than half the board space of a discrete implementation.

## Features

- 16-Bit High Speed ADC
- Up to 300MHz IF Range
- 75dB SNR, 83dB SFDR (LTM9001-AD)
- Low Noise, Low Distortion Amplifiers
  - Fixed Gain: 8dB, 14dB, 20dB or 26dB
  - 50Ω, 200Ω or 400Ω Input Impedance
- Integrated Passive Components
  - Anti-Alias Filter
  - Supply and Reference Bypass Capacitance
- No External Components Required
- Selectable LVDS or CMOS Outputs
- Optional Data Output Randomizer
- Optional Internal Dither
- ECCN 5A991 - No Export License Required
- 11.25mm × 11.25mm × 2.32mm LGA Package




**Semi-Custom Options LTM9001**

| AMPLIFIER IF RANGE | AMPLIFIER INPUT IMPEDANCE | AMPLIFIER GAIN | FILTER | ADC SAMPLE RATE | ADC RESOLUTION | OUTPUT | PART NUMBER |
|---|---|---|---|---|---|---|---|
| 300MHz | 200Ω | 20dB | 162.5MHz BPF, 50MHz BW | 130Msps | 16-Bit | LVDS/CMOS | LTM9001-AA |
| 300MHz | 200Ω | 14dB | 70MHz BPF, 25MHz BW | 130Msps | 16-Bit | LVDS/CMOS | LTM9001-AD |
| 300MHz | 400Ω | 8dB | DC-300MHz LPF | 160Msps | 16-Bit | LVDS/CMOS | LTM9001-BA |
| 300MHz | 400Ω | 8dB | DC-10MHz LPF | 25Msps | 16-Bit | CMOS | LTM9001-GA |
| **Select Combination of Options from Columns Below** | | | | | | | |
| DC-300MHz | 50Ω | 26dB | LPF TBD | 160Msps | 16-Bit | LVDS/CMOS | |
| DC-140MHz | 200Ω | 20dB | BPF TBD | 130Msps | 14-Bit | LVDS/CMOS | |
| DC-70MHz | 200Ω | 14dB | | 105Msps | | CMOS | |
| DC-35MHz | 400Ω | 8dB | | 80Msps | | CMOS | |

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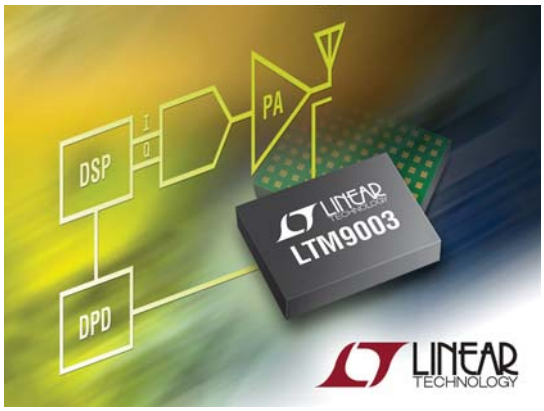
## LTM9002: 14-Bit, 125Msps Dual-Channel IF/ Baseband µModule Receiver

**Semi-Custom Options LTM9002**

| AMPLIFIER IF RANGE | AMPLIFIER INPUT IMPEDANCE | AMPLIFIER GAIN | FILTER | ADC SAMPLE RATE | ADC RESOLUTION | AUXILIARY DAC | PART NUMBER |
|---|---|---|---|---|---|---|---|
| 300MHz | 50Ω | 26dB | 170MHz LPF | 125Msps | 14-Bit | 12-Bit, SPI | LTM9002-AA |
| 140MHz | 200Ω (Channel A)<br>400Ω (Channel B) | 20dB (Channel A)<br>8dB (Channel B) | 25MHz LPF | 65Msps | 12-Bit | None | LTM9002-LA |

## LTM9003: 12-Bit Digital Pre-Distortion Receiver Subsystem

- Fully Integrated Receiver Subsystem for Digital Pre-Distortion Applications
- Down-Converting Mixer with Wide RF Frequency Range: 400MHz to 3.8GHz
- 125MHz Wide Bandpass Filter, <0.5dB Passband Ripple
- Low Power ADC with Up to 12-Bit Resolution, 250Msps Sample Rate
- –145.5dBm/Hz Input Noise Floor, 25.8dBm IIP3
- 1.5W Total Power Consumption
- 50Ω Single-Ended RF and LO Ports
- Internal Bypass Capacitance, No External Components
- ADC Clock Duty Cycle Stabilizer
- 11.25mm × 15mm LGA package



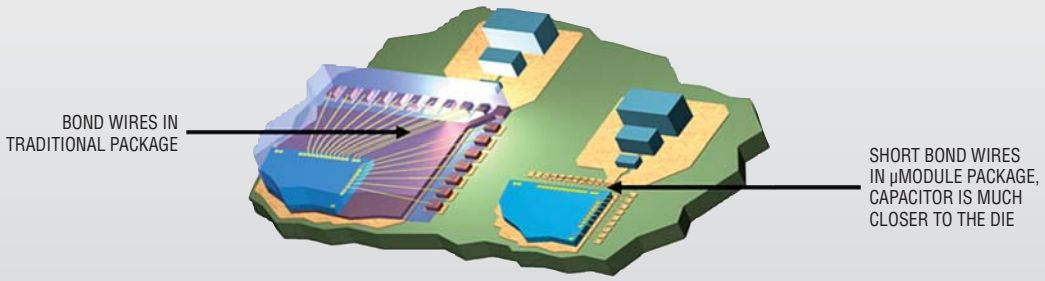

## Semi-Custom Options

The µModule construction affords a new level of flexibility in application-specific standard products. Standard ADC, amplifier and RF components can be integrated regardless of their process technology and matched with passive components to a particular application.

Linear Technology has in place a program to deliver other speed, resolution, IF range, gain and filter configurations for nearly any specified application. These semi-custom designs are based on existing ADCs, amplifiers and mixers with an appropriately modified matching network. The final subsystem is then tested to the exact parameters defined for the application. The final result is a fully integrated, accurately tested and optimized solution in the same package. For more details, contact Linear Technology.

## Benefits of µModule Technology

- Ease of Use
  - Eliminates Most Challenges of Driving High Speed ADCs
  - Integrates Key Components
  - Simplifies Layout without Sacrificing Performance
  - Provides System-Level Testing
- Dramatically Smaller and Simpler than Discrete Implementations
- Proven LTC Quality, Reliability and Service
- ECCN 5A991 - No Export License Required



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